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there Megacerops,' by R. S. Lull, accompanied by an illustration which differs from others previously made in showing the animal with a short, double nasal horn. This, it is argued, was, like that of the rhinoceros, composed of agglutinated hairs. We have another of the 'Synopsis of North American Invertebrates,' this, No. XXI., by W. R. Coe, being devoted to the Nemerteans, part I. W. B. Davis gives the sixth paper on 'Studies of the Plant Cell,' and the balance of the number is devoted to reviews and correspondence.

*The American Museum Journal* for July is termed the Reptile Number, the major part of its contents consisting of a synopsis of 'The Reptiles of the Vicinity of New York City,' by Raymond L. Ditmars, accompanied by a key and numerous excellent illustrations. The article is issued separately as Guide Leaflet No. 19.

*The Zoological Society Bulletin* for July is as good as its predecessors. C. William Beebe describes 'The New Bird House' at length, giving a number of fine illustrations of the building and its contents. There is an excellent article on 'Labeling Live Animals' with samples of the labels used at the New York Zoological Park, one on 'Tree Planting at the Zoological Park' and another on 'Our Series of Batrachians.' The illustrations are particularly good.

*The Museums Journal* of Great Britain for July completes the fourth volume of this valuable publication and includes the index. Its leading articles are 'The New Local Museum in Bad Bielehrad, near Jitschin, Bohemia,' by Anton Fritsch, and 'A System for the Registration of the Contents of Museums,' by L. Wray, of the Perak Museum. The interest and value of the *Journal*, however, lie largely in its numerous brief notes relating to many museums.

#### DISCUSSION AND CORRESPONDENCE.

##### THE NEEDS OF SCIENTIFIC MEN.

MUCH has been said recently about the desirability of offering 'brilliant prizes' to men

who 'succeed' in science. In *SCIENCE* of July 7, p. 27, are some fresh remarks on this subject, from the address of President Roosevelt to the alumni of Harvard. The time has come when the worm, with the kind permission of the editor, desires to turn.

I write as an ordinary working naturalist, and on behalf of my kind. We neither expect scintillating 'success,' nor do we look forward to any prizes in the way of highly-paid positions. Our needs are mainly two: (1) adequate time for work and (2) a living wage. These are exactly the things we can not have, in the present state of this country. It is only necessary to make a few inquiries among scientific workers, to find out that very few, even among the most distinguished, can pursue their studies unhindered. A very short time ago I had a conversation with one of the most able naturalists America has ever produced, holding an apparently excellent position, and he explained to me how he was obliged to spend a large part of his time in routine work, because of the lack of adequate assistance. A day or two later I talked to a man who has a most intimate knowledge of a certain group of animals, and has discovered many new facts; but few of his discoveries will ever be put in print, because of the incessant pressure of other duties. These men are not part of the 'great unemployed'; they hold positions most people would envy; and, moreover, they are excellent samples of all the rest.

The difficulty is intimately connected with the other one, that of the living wage. There is no living wage for *research*; research in pure science is at present a parasitic industry, to borrow a term from the economists. Both of the men I have just referred to get their salaries for doing economic work, and whatever they do in pure science is supported and made possible by the other. A still larger body of researchers lives upon the proceeds of teaching, while those who *actually get a living by research* are very, very few. The experiment stations, even, do not disobey the general rule, for the demand for immediate results of economic value is such that the workers are almost obliged, in the majority of cases, to desist from work of a broad and fundamental

character; while most of them, of course, have to do a large amount of teaching.

It would be difficult or impossible to overestimate the value of the teaching and economic work referred to. They are indispensable and in every way worthy of the support they receive. But research in pure science—meaning by this term research directed toward ascertaining the methods of nature without immediate economic or educational ends—is even more necessary, for it is the rock on which the other two must necessarily build. It also must be supported—and by whom? Surely by the recipient of the benefits it confers, that is, the human race.

I can not agree with President Roosevelt that the highest work will never be affected by the question of compensation. It will be and is continually affected by the fact that it can not get even the wherewithal to keep the machine at work. On the other hand, it is likely to be totally destroyed, if affected at all, by the offer of 'brilliant positions.' For what are these positions, judging from those now existing? Mainly and often wholly executive; useful and honorable, indeed, but not, in their essence, *scientific* positions at all! Who proposes to pay a man ten thousand a year, and then *leave him alone to go on with his work*? Really, the situation suggests a slang expression, not fitted for the pages of SCIENCE.

I once heard of an Englishman who said he would work hard in science until he got his F.R.S., and would then stop. We do not want men with that spirit, who begin and continue with the hope and expectation of a prize, financial or social. The scientific man has his real prizes, which he values highly and of which he can not be robbed; these are to see his ideas and discoveries woven into the fabric of human knowledge, and become integral and essential parts of the great temple of which he is one of the myriad builders. This alone is to him worth while; and it is a positive injury to divert him with baubles. His prayer is, to be permitted to work as long as life lasts, and that it may be said of him, as I heard it said of that fine old entomologist,

J. O. Westwood, in his last years, 'he never gets tired.'

T. D. A. COCKERELL.

THE EDITORSHIP OF THE ENGINEERING AND  
MINING JOURNAL.

TO THE EDITOR OF SCIENCE: On July 1, 1905, Mr. T. A. Rickard relinquished the managing editorship of the *Engineering and Mining Journal*, a position which he held with merit for two and a half years. Although Mr. Rickard has been succeeded by others who will maintain the high standing of the *Journal* as a technical magazine, his voluntary retirement, in my opinion as an American geologist, is a distinct loss to science in this country, inasmuch as, in addition to his intimate knowledge of the business side of mining, he appreciated the important relation of this subject to geology. Through this appreciation, during his editorial incumbency, he secured and stimulated many excellent original contributions upon the geology of interesting localities, which would not otherwise have been published.

Of all the economic applications of geology, the questions pertaining to the origin, occurrence and availability of ore deposits are by far the most important, and, perhaps, the sympathy and encouragement of mining men have been the greatest impetus in this country toward securing the means of purely scientific research.

The numbers of the *Journal* edited by Mr. Rickard constitute a most valuable addition to the annals of American geology, and it is hoped that the talents of business integrity, high idealism and charming literary style, so rarely found in combination with scientific knowledge and so well developed in him, will not long continue idle.

That Mr. Rickard has recently declined a professorship of mining in the Royal School of Mines, a position which carries with it title and honor, and has chosen to remain in America, will be gratifying to all of his confrères in the geological profession.

R. T. H.